2

WHAT IS CLAIMED IS:

- 1. A pharmaceutical composition comprising an MTb81 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex, and an Mo2 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex.
- 1 2. The composition of claim 1, wherein the antigens are covalently 2 linked, thereby forming a fusion polypeptide.
- The composition of claim 2, wherein the fusion polypeptide has the amino acid sequence of TbF14.
- 4. A pharmaceutical composition comprising a TbRa3 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex, a 38kD antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex, a Tb38-1 antigenfor an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex, and a FL TbH4 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex.
- The composition of claim 4, wherein the antigens are covalently linked, thereby forming a fusion polypeptide.
 - 6. The composition of claim 5, wherein the fusion polypeptide has the amino acid sequence of TbF15.
- 7. A pharmaceutical composition comprising an HTCC#1 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex, and a TbH9 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex.
- 1 8. The composition of claim 7, wherein the antigens are covalently 2 linked, thereby forming a fusion polypeptide.
- 1 9. The composition of claim 7, comprising a full-length HTCC#1 antigen 2 from a *Mycobacterium* species of the tuberculosis complex, and a full-length TbH9 antigen 3 from a *Mycobacterium* species of the tuberculosis complex.

	1 10. The composition of claim 9, wherein the antigens are covalently
	2 linked, thereby forming a fusion polypeptide.
	11. The composition of claim 10, wherein the fusion polypeptide has the
•	amino acid sequence of HTCC#1(FL)-TbH9(FL).
1	12. The composition of claim 7
2	12. The composition of claim 7, comprising a polypeptide comprising amino acids 184-392 of an HTCC#1 antigen from a Mycobacterium species of the
3	tuberculosis complex, a TbH9 antigen or an immunogenic fragment thereof from a
4	Mycobacterium species of the tuberculosis complex, and a polypeptide comprising amino
5	acids 1-129 of an HTCC#1 antigen from a Mycobacterium species of the tuberculosis
6	complex.
1	
2	13. The composition of claim 12, wherein the antigens are covalently
2	linked, thereby forming a fusion polypeptide.
1	14. The composition of claim 13, where it is
2	14. The composition of claim 13, wherein the fusion polypeptide has the amino acid sequence of HTCC#1(184-392)/TbH9/HTCC#1(1-129).
1	I
2	15. A pharmaceutical composition comprising a TbRa12 antigen or an
3	and the first thereof from a Mycobacterium species of the first
4	antigen of an immunogenic fragment thereof from a Mysock actual
7	of the tuberculosis complex.
1	16. The composition of claim 15, wherein the antigens are covalently
2	linked, thereby forming a fusion polypeptide.
1	
2	17. The composition of claim 16, wherein the fusion polypeptide has the
_	amino acid sequence of TbRa12-HTCC#1.
1	18. A pharmaceutical composition comprising at least two heterologous
2	antigens from a Mycobacterium species of the tuberculosis complex or an immunogenic
	and the feory wherein the antigen or immungenic fragment thereof is an included and the same of the sa
	30 ap consisting of W11881, M02, TbRa3, 38kD Tb38-1 (MTb11) EL TIMA AVERAGE
5	(Mtb40), TbH9, MTCC#2 (Mtb41), DPEP, DPPD, TbRa35, TbRa12, MTb59, MTb82, Erd14

(Mtb16), FL TbRa35 (Mtb32A), DPV (Mtb8.4), MSI (Mtb9.8), MTI (Mtb9.9A, also known as MTI-A), ESAT-6, α -crystalline, and 85 complex 7 1 The composition of claim 18, wherein the antigens are covalently 19. linked, thereby forming a fusion polypeptide. 2 1 The composition of claim 1, 4, 7, 15, or 18, wherein the antigens are 20. 2 covalently linked via a chemical linker. 1 The composition of claim 20, wherein the chemical linker is an amino 21. 2 acid linker. 1 The composition of claim 1, 4, 7, 15, or 18, further comprising at least 22. one additional antigen from a Mycobacterium species of the tuberculosis complex, wherein 2 the antigen is selected from the group consisting of MTb81, Mo2, TbRa3, 38kD, Tb38-1 3 (MTb11), FL TbH4, HTCC#1 (Mtb40), TbH9, MTCC#2 (Mtb41), DPEP, DPPD, TbRa35, 4 TbRa12, MTb59, MTb82, Erd14 (Mtb16), FL TbRa35 (Mtb32A), DPV (Mtb8.4), MSL 5 (Mtb9.8), MTI (Mtb9.9A, also known as MTI-A), ESAT-6, α-crystalline, and 85 complex, or 6 an immunogenic fragment thereof. 7 1 The composition of claim 1, 4, 7, 15, or 18, further comprising an 23. 2 adjuvant. 1 The composition of claim 23, wherein the adjuvant comprises QS21 24. and MPL. The composition of claim 23, wherein the adjuvant is selected from the 25. group consisting of AS2, ENHANZYN, MPL, QS21, CWS, TDM, AGP, CPG, Leif, saponin, and saponin mimetics. The composition of claim 1, 4, 7, 15, or 18, further comprising BCG. 26. The composition of claim 1, 4, 7, 15, or 18, further comprising an NS1 27. antigen or an immunogenie fragment thereof from a Mycobacterium species of the 2 tuberculosis complex. 3 1 The composition of claim 1, 4, 7, 15, or 18, wherein the 28. 2 Mycobacterium species is Mycobacterium tuberculosis.

	1 20 4
	29. An expression cassette comprising a puel.
	management thereof from a Mycobact
	complex, and a nucleic acid encoding an Mo2 and
	4 fragment thereof from a <i>Mycobacterium</i> species of the tuberculosis complex.
	1
	The expression cassette of claim 20 miles
	7 February comprising an M 1681 antigen or an immune service.
	a nucleic acid encoding an Mo2 antigen or an immunogenic fragment thereof.
	oxpression cassette of claim 30, wherein the
	a fusion polypeptide having the amino acid sequence of TbF14.
	32. The expression cassette of claim 21.
2	32. The expression cassette of claim 31, wherein the nucleic acid has the nucleotide sequence of the nucleic acid encoding TbF14.
1	33. An expression cassette comprising a nucleic acid encoding a TbRa3
2	50110 Hagillellithereof from a W
3	a nucleic acid encodingle 201-D
4	species of the tuberculosis served
5	- The state of the
6	tuberculosis complex, and a nucleic acid encoding a FL TbH4 antigen or an immunogenic fragment thereof from a Mycobacteria
7	fragment thereof from a Mycobacterium species of the tuberculosis complex.
1	I
1	34. The expression cassette of claim 33, wherein the nucleic acid encodes a fusion polypeptide comprising a Th Diagram.
2	- 71 1 - Vomprising a 10Kg3 antigen on an in
3	The state of the s
4	fragment thereof, and a nucleic acid encoding a FL TbH4 antigen or an immunogenic fragment thereof
5	fragment thereof.
1	
	35. The expression cassette of claim 34, wherein the nucleic acid encodes a fusion polypeptide having the amino axid.
2	a fusion polypeptide having the amino acid sequence of TbF15.
1	1
2	on on pression cassette of claim 35 wherein 41
	nucleotide sequence of the nucleic acid encoding TbF15.

	•
1 ·	37. An expression cassette comprising a nucleis acid encoding an
2	HTCC#1 antigen or an immunogenic fragment thereof from a Mycobacterium species of the
3	tuberculosis complex, and a nucleic acid encoding a TbH9 anggen or an immunogenic
4	fragment thereof from a Mycobacterium species of the tuberculosis complex.
1	38. The expression cassette of claim 37, comprising a nucleic acid
2	encoding a full-length HTCC#1 antigen from a Mycobacterium species of the tuberculosis
3	complex, and a nucleic acid encoding a full-length TbF19 antigen from a Mycobacterium
4	species of the tuberculosis complex.
1	39. The expression cassette of claim 37, comprising a nucleic acid
2	encoding a polypeptide comprising amino acids 184-392 of an HTCC#1 antigen from a
3	Mycobacterium species of the tuberculosis complex, a nucleic acid encoding a TbH9 antigen
4	or an immunogenic fragment thereof from a Mycobacterium species of the tuberculosis
5	complex, and a nucleic acid encoding a polypeptide comprising amino acids 1-129 of an
6	HTCC#1 antigen from a Mycobacterium species of the tuberculosis complex.
1	40. The expression cassette of claim 37, wherein the nucleic acid encodes
2	a fusion polypeptide comprising an HTCC#1 antigen or an immunogenic fragment thereof,
3	and a TbH9 antigen of an immunogenic fragment thereof.
1	41. The expression cassette of claim 38, wherein the nucleic acid encodes

- 1 41. The expression cassette of claim 38, wherein the nucleic acid encodes a fusion polypeptide comprising a full-length HTCC#1 antigen, and a full-length TbH9 antigen.
- 1 42. The expression cassette of claim 39, wherein the nucleic acid encodes 2 a fusion polypeptide comprising amino acids 184-392 of an HTCC#1, a TbH9 antigen or an 3 immunogenic fragment thereof, and amino acids 1-129 of an HTCC#1 antigen.
 - 43. The expression cassette of claim 41, wherein the nucleic acid encodes a fusion polypeptide having the amino acid sequence of HTCC#1(FL)-TbH9(FL).
- 1 44. The expression cassette of claim 43, wherein the nucleic acid has the 2 nucleotide sequence of the nucleic acid encoding HTCC#1(FL)-TbH9(FL).

		1 45.	The expression cassette of claim 42
		2 a fusion polypeptide	The expression cassette of claim 42, wherein the nucleic acid encodes having the amino acid sequence of HTCC#1(184-
		3 392)/ТьН9/НТСС#1	(1-129).
		1 40	
		40.	The expression cassette of claim 45, wherein the nucleic acid has the
		- macronde sequence	of the nucleic acid encoding HTCC#1(184-392)/TbH9/HTCC#1(1-129).
		1 47.	
	2	2 antigen or an immuno	An expression cassette comprising a nucleic acid encoding a TbRa12 genic fragment thereof from a Mycobacterium species of the
	3	3 tuberculosis complex,	and a nucleic acid encedia.
	4	fragment thereof from	and a nucleic acid encoding an HTCC#1 antigen or an immunogenic a Mycobacterium species of the tuberculosis complex.
_	1		<i>,</i>
J''' (J''')	1 2	40.	The expression cassette of claim 47, wherein the nucleic acid encodes
	3		Aprilling all Nall / antigen or on in-
		an HTCC#1 antigen or	an immunogenic fragment thereof, and
	1		X
	2	a fusion polypeptide ha	The expression cassette of claim 48, wherein the nucleic acid encodes ving the amino acid sequence of TbRa12-HTCC#1.
	1		actual sequence of TbRa12-HTCC#1.
	1	50./ T	the expression cassette oficiaim 49, wherein the nucleic acid has the
	2	nucleotide sequence of t	he nucleic acid encoding TbRa12-HTCC#1.
	1		
	2	heterologous antigens for	n expression cassette comprising a nucleic acid encoding at least two
	3	- O II(on a mycooucierium species of the total
	4	O World (ucicul, wherein the antisant
	5	group c	(U113131111UM() FM(VI I I I V I MVI - O TOI -> -
	6	` '-'	Y YOULD, IVINI CAMPACIATION OF THE PROPERTY OF
	7	-, u. r (1	TOTOL TORASS (Mth32A) DDV (Act a
		, and infown as	MTI-A), ESAT-6, α-crystalline, and 85 complex.
]		52. The	expression cassette of claim 51, wherein the nucleic acid encodes
2	2 ;	a fusion polypeptide.	31, wherein the nucleic acid encodes
1		52 m	
2		53. The	expression cassette of claim 29, 33, 37, 47 or 51, further
3	s	. Samuelote actual	alcouing at least one additional
	-	r or the tuberculosis (complex, wherein the antigen is selected from the group consisting
			o i sanding

2

3

4

5

1

2

- of MTb81, Mo2, TbRa3, 38kD, Tb38-1 (MTb11), FL TbH4, HT CH1 (Mtb40), TbH9, 4
- 5 MTCC#2 (Mtb41), DPEP, DPPD, TbRa35, TbRa12, MTb59, MTb82, Erd14 (Mtb16), FL
- TbRa35 (Mtb32A), DPV (Mtb8.4), MSL (Mtb9.8), MTI, ESAIT-6, α-crystalline, and 85 6
- 7 complex, or an immunogenic fragment thereof.
- 1 54. The expression cassette of claim 29, 33, 37, 47 or 51, further
- comprising a nucleic acid encoding an NS1 antigen or an antigenic fragment thereof from a 2
- 3 Mycobacterium species of the tuberculosis complex.
- 55. The expression cassette of claim 29, 33, 37, 47 or 51, wherein the 1
- Mycobacterium species is Mycobacterium tuberculosis! 2
 - 56. A method for eliciting an immune response in a mammal, the method comprising the step of administering to the mammal/an immunologically effective amount of a pharmaceutical composition comprising an MTb 1 antigen or an immunogenic fragment thereof from a Mycobacterium species of the tuberculosis complex, and an Mo2 antigen or an immunogenic fragment thereof from a Mycobacterium species of the tuberculosis complex.
 - The method of claim 56 wherein the antigens are covalently linked, thereby forming a fusion polypertide.
 - The method of claim 57, wherein the fusion polypeptide has the amino acid sequence of TbF14.
- A method for eliciting an immune response in a mammal, the method 59. 1 comprising the step of administering to the mammal an immunologically effective amount of 2 a pharmaceutical composition comprising a TbRa3 antigen or an immunogenic fragment 3 thereof from a Mycobacterium species of the tuberculosis complex, a 38kD antigen or an 4 immunogenic fragment thereof from Mycobacterium species of the tuberculosis complex, a 5 Tb38-1 antigen or an immunogenic fragment thereof from a Mycobacterium species of the 6 tuberculosis complex, and a FL TbH4 antigen or an immunogenic fragment thereof from a
- 7
- Mycobacterium species of the tuberculosis complex. 8
- 1 60. The method of claim 59, wherein the antigens are covalently linked, thereby forming a fusion polypeptide. 2

1	61. The method of claim 60, wherein the fusion polypeptide has the amino
2	acid sequence of TbF15.
_	
1	62. A method for eliciting an immune response in a mammal, the method
2	comprising the step of administering to the mammal an immunologically effective amount of
3	a pharmaceutical composition comprising an HTCC#1 antigen or an immunogenic fragment
4	thereof from a Mycobacterium species of the tuberculosis complex, and a TbH9 antigen or an
5	immunogenic fragment thereof from a Mycobacterium species of the tuberculosis complex.
1	63. The method of claim 62, wherein the pharmaceutical composition
2	comprises a full-length HTCC#1 antigen from a Mycobacterium species of the tuberculosis
3	complex, and a full-length TbH9 antigen from a Mycobacterium species of the tuberculosis
4	complex.
1	64. The method of claim 63 wherein the antigens are covalently linked,
2	thereby forming a fusion polypeptide.
1	65. The method of claim 64, wherein the fusion polypeptide has the amino
2	acid sequence of HTCC#1(FL)-TbH9(FL).
1	66. The method of claim 62, wherein the pharmaceutical composition
2	comprises a polypeptide comprising amino acids 184-392 of an HTCC#1 antigen from a
3	Mycobacterium species of the tuberculosis complex, a 1bH9 antigen or an immunogenic
4	fragment thereof from a Mycobacterium species of the tuberculosis complex, and a
5	polypeptide comprising amino acids 1/129 of an HTCC#1 antigen from a Mycobacterium
6	species of the tuberculosis complex.
1	67. The method of claim 66, wherein the antigens are covalently linked,
2	thereby forming a fusion polypeptide.
1	68. The method of claim 67, wherein the fusion polypeptide has the amino
2	acid sequence of HTCC#1(184-392)/TbH9/HTCC#1(1-129).
1	69. A methody for eliciting an immune response in a mammal, the method
2	comprising the step of administering to the mammal an immunologically effective amount of

a pharmaceutical composition comprising a TbRa12 antigen or an immunogenic fragment

2

4 thereof from a Mycobacterium species of the tuberculosis complex, and an HTCC#1 antigen or an immunogenic fragment thereof from a Mycobacter fum species of the tuberculosis 5 6 complex. 1 The method of claim 69, wherein the antigens are covalently linked, 70. thereby forming a fusion polypeptide. 2 1 The method of claim 70, wherein the fusion polypeptide has the amino 71. acid sequence of TbRa12-HTCC#1. 2 1 72. A method for eliciting an immune response in a mammal, the method comprising the step of administering to the mammal an immunologically effective amount of 2 a pharmaceutical composition comprising at least two heterologous antigens from a 3 Mycobacterium species of the tuberculosis complex or an immunogenic fragment thereof, 4 wherein the antigen or immungenic fragment thereof is selected from the group consisting of 5 MTb81, Mo2, TbRa3, 38KD, Tb38-1 (MTb) 1), FL TbH4, HTCC#1 (Mtb40), TbH9, 6 MTCC#2 (Mtb41), DPEP, DPPD, TbRa35, TbRa12, MTb59, MTb82, Erd14 (Mtb16), FL 7 TbRa35 (Mtb32A), DPV (Mtb8.4), MSL (Mtb9.8), MTI (Mtb9.9A, also known as MTI-A), 8 ESAT-6, α-crystalline, and 85 complex. 9 1 The method of claim 72, wherein the antigens are covalently linked, thereby forming a fusion protein. 2 1 The method of claim 56, 59, 62, 69, or 72, wherein the mammal has 74. 2 been immunized with BCG. 1 The method of claim 56, 59, 62, 69, or 72, wherein the mammal is a 75. 2 human. 1 76. The method of claim 56, 59, 62, 69, or 72, wherein the composition is administered prophylactically. 2 1 The method of claim 56, 59, 62, 69, or 72, wherein the pharmaceutical 77. composition further comprises an adjuvant. 2 The method of claim 77, wherein the adjuvant comprises QS21 and 78. MPL.

2

3

4

5

6

1

2

3

1

2

1

1	79.	The method of claim 77, wherein the	adjuvant is selected from the
2	group consisting of A	S2, ENHANZYN, MPL, QS21, CWS,	TDM, AGP, CPG, Leif, saponin
3	and saponin mimetics		'

- 80. A method for eliciting an immune response in a mammal, the method comprising the step of administering to the mammal antimmunologically effective amount of an expression cassette comprising a nucleic acid encoding an MTb81 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex, and a nucleic acid encoding an Mo2 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex.
- 81. The method of claim 80, wherein the nucleic acid encodes a fusion polypeptide comprising an MTb81 antigen of an immunogenic fragment thereof, and an Mo2 antigen or an immunogenic fragment thereof.
- 82. The method of claim 81, wherein the nucleic acid encodes a fusion polypeptide having the amino acid sequence of TbF14.
- 83. The method of claim 82, wherein the nucleic acid has the nucleotide sequence of the nucleic acid encoding TbF14.
- A method for eliciting an immune response in a mammal, the method 1 84. comprising the step of administering to the mammal an immunologically effective amount of 2 an expression cassette comprising a nucleic acid encoding a TbRa3 antigen or an 3 immunogenic fragment thereof from a Mycobacterium species of the tuberculosis complex, a 4 nucleic acid encoding a 38kD antigen or an immunogenic fragment thereof from a 5 Mycobacterium species of the tuberculosis complex, a nucleic acid encoding a Tb38-1 6 antigen or an immunogenic fragment thereof from a Mycobacterium species of the 7 tuberculosis complex, and a nucleic acid encoding a FL TbH4 antigen or an immunogenic 8 fragment thereof from a Mycobacterium species of the tuberculosis complex. 9
- 1 85. The method of claim 84, wherein the nucleic acid encodes a fusion 2 polypeptide comprising a TbRa3 antigen or an immunogenic fragment thereof, a 38kD 3 antigen or an immunogenic fragment thereof, a Tb38-1 antigen or an immunogenic fragment 4 thereof, and a FL TbH4 antigen or an immunogenic fragment thereof.

1	86. The method of claim 85, wherein the nucleic acid encodes a fusion
2	polypeptide having the amino acid sequence of TbF15.
1	87. The method of claim 86, wherein the nucleic acid has the nucleotide
2	sequence of the nucleic acid encoding TbF15.
	on the state of th
1	88. A method for eliciting an immune response in a mammal, the method
2	comprising the step of administering to the mammal an immunologically effective amount of
3	an expression cassette comprising a nucleic acid encoding an HTCC#1 antigen or an
4	immunogenic fragment thereof from a Mycobacterium species of the tuberculosis complex,
5	and a nucleic acid encoding a TbH9 antigen or an immunogenic fragment thereof from a
6	Mycobacterium species of the tuberculosis complex.
1	89. The method of claim 88, wherein the nucleic acid encodes a fusion
2	polypeptide comprising an HTCC#1 antigen or an immunogenic fragment thereof, and a
3	TbH9 antigen or an immunogenic fragment thereof.
1	The method of claim 89, wherein the nucleic acid encodes a fusion
2	polypeptide comprising a full-length/HTCC#1 antigen or an immunogenic fragment thereof,
3	and a full-length TbH9 antigen or an immunogenic fragment thereof.
J	
1	91. The method of claim 90, wherein the nucleic acid encodes a fusion
2	polypeptide having the amino acid sequence of HTCC#1(FL)-TbH9(FL).
1	92. The method of claim 91, wherein the nucleic acid has the nucleotide
2	sequence of the nucleic acid encoding HTCC#1(FL)-TbH9(FL).
1	73. The method of claim 89, wherein the nucleic acid encodes a fusion
2	polypeptide comprising a polypeptide comprising amino acids 184-392 of an HTCC#1
	antigen, a TbH9 antigen or antimmunogenic fragment thereof, and a polypeptide comprising
3	amino acids 1-129 of an HTCC#1 antigen.
4	amino acids 1-129 of all H10C#1 antigen.
1	94. The method of claim 93, wherein the nucleic acid encodes a fusion
2	polypeptide having the amino acid sequence of HTCC#1(184-392)/TbH9/HTCC#1(1-129).
1	95. The method of claim 93, wherein the nucleic acid has the nucleotide
2	sequence of the nucleic acid encoding HTCC#1(184-392)/TbH9/HTCC#1(1-129).

1	96. A method for eliciting an immune response in a mammal, the method
2	comprising the step of administering to the mammal an immunologically effective amount of
3	an expression cassette comprising a nucleic acid encoding a TbRa12 antigen or an
4	immunogenic fragment thereof from a Mycobacterium species of the tuberculosis complex,
5	and a nucleic acid encoding an HTCC#1 antigen or an immunogenic fragment thereof from a
6	Mycobacterium species of the tuberculosis complex.
1	97. The method of claim 96, wherein the nucleic acid encodes a fusion
2	polypeptide comprising a TbRa12 antigen or an immunogenic fragment thereof, and an
3	HTCC#1 antigen or an immunogenic fragment thereof.
1	98. The method of claim/97, wherein the nucleic acid encodes a fusion
1	
2	polypeptide having the amino acid sequence of TbRa12-HTCC#1.
1	99. The method of claim 98, wherein the nucleic acid has the nucleotide
2	sequence of the nucleic acid encoding TbRa12-HTCC#1.
1	100. A method for eliciting an immune response in a mammal, the method
, 2	comprising the step of administering to the mammal an immunologically effective amount of
3	an expression cassette comprising a nucleic acid encoding at least two heterologous antigens
4	from a Mycobacterium species of the tuberculosis complex or an immunogenic fragment
5	thereof, wherein the antigen or immungenic fragment thereof is selected from the group
6	consisting of MTb81, Mo2, TbRa, 38kD, Tb38-1 (MTb11), FL TbH4, HTCC#1 (Mtb40),
7	TbH9, MTCC#2 (Mtb41), DPEP, DPPD, TbRa35, TbRa12, MTb59, MTb82, Erd14 (Mtb16),
8	FL TbRa35 (Mtb32A), DPV (Mtb8.4), MSL (Mtb9.8), MTI (Mtb9.9A, also known as MTI-
9	A), ESAT-6, α-crystalline, and 85 complex.
1	101. The method of claim 100, wherein the nucleic acid encodes a fusion
2	polypeptide.
1	102. The method of claim 80, 84, 88, 96, or 100, wherein the mammal has
2	been immunized with BCG.
	\parallel
1	103. The method of claim 80, 84, 88, 96, or 100, wherein the mammal is a
2	human.
	J

2

3

4

5 6

1

2

1

2

3 4 104. The method of claim 80, 84, 88, 96, or 100, wherein the composition is administered prophylactically.

- 105. A fusion protein comprising an MTb81 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex, and an Mo2 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex.
- 1 106. The protein of claim 105, wherein the fusion polypeptide has the 2 amino acid sequence of TbF14.
 - 107. A fusion protein comprising a TbRa3 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex, a 38kD antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex, a Tb38-1 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex, and a FL TbH4 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex.
 - 108. The protein of claim 107, wherein the fusion polypeptide has the amino acid sequence of TbF15.
 - 109. A fusion protein comprising an HTCC#1 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex, and a TbH9 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex.
- 1 110. The protein of claim 109, comprising a full-length HTCC#1 antigen 2 from a *Mycobacterium* species of the tuberculosis complex, and a full-length TbH9 antigen 3 from a *Mycobacterium* species of the tuberculosis complex.
- 1 111. The protein of claim 110, wherein the fusion polypeptide has the 2 amino acid sequence of HTCC#1(FL)-TbH9(FL).
- 1 112. The protein of claim 109, comprising a polypeptide comprising amino 2 acids 184-392 of an HTCC#1 antigen from a *Mycobacterium* species of the tuberculosis 3 complex, a TbH9 antigen or an immunogenic fragment thereof from a *Mycobacterium*

- species of the tuberculosis complex, and a polypeptide comprising amino acids 1-129 of an HTCC#1 antigen from a *Mycobacterium* species of the tuberculosis complex.

 1 113. The protein of claim 112, wherein the fusion polypeptide has the
- amino acid sequence of HTCC#1(184-392)/TbH9/HTCC#1(1-129).
 1
 1
 1
 1
 1
 1
 1
 1
 1
 1
 1
 1
 1
 1
 1
 1
 2
 3
 4
 5
 6
 7
 7
 8
 9
 9
 1
 1
 1
 1
 1
 1
 1
 1
 2
 3
 4
 4
 5
 6
 7
 7
 8
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
- fragment thereof from a *Mycobacterium* species of the tuberculosis complex, and an

 HTCC#1 antigen or an immunogenic fragment thereof from a *Mycobacterium* species of the tuberculosis complex.
- 1 115. The protein of claim 114, wherein the fusion polypeptide has the 2 amino acid sequence of TbRa12-HTCC#1.